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Medication Error of Expired Drugs for Ambulatory Patients

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ABSTRACT

Medication errors are commonly found in patient prescriptions. In Article 12 of the Pharmaceutical Law, these cases are only subject to administrative sanctions. It is also stated in the Minister of Health Regulation No. 72/2016 Articles 3 and 12 that the sanctions imposed are only administrative sanctions in accordance with the provisions of laws and regulations. The regulation is quite unclear, and will be clarified in the discussion of this research to identify laws that provide protection for ambulatory patients. The high problem of medication errors in patients indicates that it is required to take real action to prevent these cases to occur which cause detriment to the patient. Therefore, the objective of this research is to determine the factors that cause medication errors in the prescribing and dispensing phases. The research method used in this research is normative research with prospective data collection techniques which both methods can provide an overview and accuracy of data regarding the problem of medication errors on expired medicines. The results indicated that the factors causing medication errors in the prescribing phase and dispensing phase, such as work distractions such as ringing telephones, workload on health workers who are unable to do each job themselves, miscommunication between doctors and pharmacists about the use of drugs for patients, unsupported conditions while working, and education on writing prescriptions that do not comply with the requirements for completeness of prescriptions; the lack of a drug preparation room; and education regarding drug preparation that is not in accordance with prescription requests.

Keywords: Ambulatory Patients, Expired Drugs, Medication Error

INTRODUCTION

Humans are social beings, which means that they cannot be separated from the impact of other humans in their lives. Humans act socially by utilizing nature and the environment to complete and improve their welfare for their survival. Humans do not live in solitude in their lives. Humans have a desire to socialize with others. It is one of the human natures that always want to relate to other humans. It indicates an interdependent condition.¹ There are three basic things that every person must fulfill, such as the need for food, self-protection and reproduction. Unfortunately, sometimes these three things are constrained due to a human condition called illness. Illness is a process in which a person's physical, emotional, intellectual, social and spiritual development is reduced or impaired. Illness can also be defined as a disturbance in the normal functioning of the totality of the organism as a biological system and social adaptation.²

People diagnosed with the disease by a doctor may be referred to a hospital for further treatment. The doctor prescribes the appropriate medicine according to the disease suffered by the patient, and then the pharmacist will be required to prepare and administer the medicine to the patient. Under the law, only general practitioners, specialists, and dentists are authorized to write prescriptions.³ Medicine is a substance that can affect life processes and a compound used to prevent, treat, diagnose diseases or disorders that cause a certain condition.⁴ In addition, medicine can also be used to treat disease, reduce symptoms or modify chemical processes in the body.⁵

Medication errors have become a health problem that causes various impacts on patients starting from mild, severe, and even fatal risks.⁶ In addition, medication error can also be defined as a failure in the treatment process and the occurrence of medication errors that can affect patient safety.⁷ Medication errors can occur in 4 phases, such as prescribing, transcribing, dispensing, and administration. The occurrence of an error in one of these phases can cause errors in other phases.⁸ Before using a medicine, it is important to know the expiry date, characteristics and

¹ Dr. Ratna Puspitasari, *Manusia Sebagai Makhluk Sosial*, 2017.

² Potter and Perry, *Buku Ajar Fundamental Keperawatan: Konsep, Proses, Dan Praktik* (Jakarta: EGC, 2015).

³ dr. Sienny Agustin, "Informasi Seputar Resep Dokter Yang Perlu Anda Ketahui," *Alodokter*.

⁴ Wanda Lisyanto Prabowo, "Teori Tentang Pengetahuan Peresepan Obat," *JMH: Jurnal Medika Utama* 2, no. 4 (2021): 1036–1039.

⁵ H.C Ansel, *Pengantar Bentuk Sediaan Farmasi*, ed. F diterjemahkan oleh Ibrahim, Edisi IV. (Jakarta: UI Press, 2016).

⁶ Dessy Angraini, Tika Afriani, and Revina, "Analisis Faktor-Faktor Terjadinya Medication Error Di Apotek RSI Ibnu Sina Bukittinggi," *Jurnal Endurance: Kajian Ilmiah Problema Kesehatan* 6, no. 1 (2021).

⁷ M. A. W. Khairurrijal and Norisca Aliza Putriana, "Review : Medication Error Pada Tahap Prescribing, Transcribing, Dispensing, Dan Administration," *Majalah Farmasetika* 2, no. 4 (2017).

⁸ Astriani Maulida and Wempi Eka Rusmana, "Gambaran Medication Error Pada Resep Pasien Rawat Jalan Di RSI Assyifa Sukabumi Periode Juni 2021," *SOSAINS: Jurnal Sosial dan Sains* 1, no. 11 (2021): 1360–1366.

usage so that its use is appropriate and safe. Information about the medicine can be obtained from the brochure accompanying the medicine. If the patient does not understand the contents of the information in the packaging, etiquette, or drug brochure, it is recommended to ask the healthcare worker or nurse. Due to the increasing amount of medicines available in hospitals and communities, healthcare workers and nurses are responsible for updating their knowledge about medicines. It aims to provide quality service to patients. Hospital healthcare as an institution that is directly related to patients must prioritize safe, quality, and effective health services by prioritizing the interests of patients in accordance with hospital service standards. Communication between nurses and patients must be conveyed clearly so that patients understand their health conditions or instructions regarding treatment delivered by nurses. Things that must be informed and discussed with patients consist of a clear understanding of the indications for drug usage, warnings related to the treatment process, information about drug side effects, adverse drug reactions, information about storing and handling drugs at home including recognizing damaged or expired drugs.⁹ One of the responsibilities of pharmacists is regulated in Pharmaceutical Services based on Law No. 36/2009 on Health; and Law No. 44/2009 on Hospitals. Legal protection of ambulatory patients due to medication errors is not regulated explicitly in the Health Law. In addition, Law No. 36/2014 on Health Workers also does not provide assurance that the safety and security of patients in consuming drugs has not been achieved.

Medication errors that often occur are related to the administration of expired drugs. This can occur due to overproduction from drug manufacturers or pharmaceutical wholesalers, or due to the accumulation of drugs in hospital pharmaceutical installations. If these occur on the ambulatory patient, there should be a legal protection system that protects the patient from medication errors through the liability of health workers or hospitals. The objectives of the Pharmaceutical Law are set out in Article 2 No. 7/1963 concerning Pharmacy further concerning Pharmaceutical Work in Article 1 Paragraph (4) which states, such as (1) health supplies in the field of pharmacy are supplies which include drugs, medicinal materials, Indonesian native drugs, Indonesian native medicinal materials, medical devices, cosmetics and so on; (2) drugs are drugs made from ingredients derived from animals, plants, minerals and synthetic drugs; (3) Indonesian indigenous medicines are medicines obtained directly from natural ingredients in Indonesia, processed in a simple manner on the basis of experience and used in traditional medicine; (4) medical devices are tools necessary for the examination, treatment, medication and manufacture of medicines; and (5) pharmaceutical work is the manufacture, processing, compounding, changing the form, mixing, storage and delivery of medicines or medicinal materials.

⁹ Vidia Sabrina Budihardjo, "Faktor Perawat Terhadap Kejadian Medication Administration Error Di Instalasi Rawat Inap," *Jurnal Administrasi Kesehatan Indonesia* 5, no. 1 (2017): 52–61.

In Article 51/2009 concerning Pharmaceutical Work and Article 21 concerning Pharmacy which states several things, such as (1) in practicing pharmacy at Pharmaceutical Service Facilities, pharmacists must apply pharmaceutical service standards; (2) the delivery and service of drugs based on a doctor's prescription is executed by pharmacists; (3) if there is no pharmacist in a remote area, then the Minister may employ a Pharmaceutical Technical Worker who already has a STRTTK (Pharmaceutical Technical Worker Registration Certificate) at a basic health service facility who is authorized to dispense and deliver medication to patients; (4) further provisions regarding the standard of pharmaceutical services as referred to in Paragraph (1) according to the type of pharmaceutical service facility shall be stipulated by the Minister; and (5) the procedures for the placement and authority of pharmaceutical technical personnel in remote areas as referred to in Paragraph (3) shall be regulated by Ministerial Regulation.

The imposition of sanctions on pharmaceutical workers is regulated in Articles 3 and 12 of Minister of Health Regulation No. 72/2016 concerning Pharmacy, which states that (1) pharmaceutical service standards in hospitals must include the following standards (a) management of pharmaceutical preparations, medical devices, and consumable medical materials, (b) pharmaceutical services. 72/2016 concerning Pharmacy which states that (1) the standard of pharmaceutical services in hospitals must include the following standards (a) management of pharmaceutical preparations, medical devices, and consumable medical materials, (b) clinical pharmaceutical services; (2) management of pharmaceutical preparations, medical devices, and consumable medical materials as referred to in Paragraph (1) letter a includes: selection, needs planning, procurement, receipt, storage distribution, destruction withdrawal, control, and administration; (3) Clinical Pharmacy Services as referred to in Paragraph (1) letter b include: prescription review and service, tracing the history of drug use, drug reconciliation, Drug Information Service (PIO), counseling, visite, Monitoring Drug Therapy (PTO), Monitoring Drug Side Effects (MESO), Evaluation of Drug Use (EPO), Dispensing sterile preparations, Monitoring Drug Levels in Blood (PKOD); (4) clinical pharmacy services in the form of dispensing sterile preparations as referred to in Paragraph (3) letter j can only be carried out by hospitals that have the facilities to produce sterile preparations; and (5) further provisions regarding the management of pharmaceutical preparations, medical devices, and consumable medical materials and clinical pharmacy services as referred to in Paragraph (2) and Paragraph (3) are contained in the appendix which is an integral part of this Ministerial Regulation.

In Article 12 regarding violations of the provisions in this Ministerial Regulation may be subject to administrative sanctions in accordance with the provisions of laws and regulations. The Regulation of Health Minister No. 72/2016 Article 3 and Article 12 explain that the sanctions imposed are in the form of

administrative sanctions. The juridical aspects of Article 3 and Article 12 have legal problems in the form of vague norms on the imposition of legal sanctions on pharmaceutical workers who commit medication errors.

There are several cases of medication errors in the medical world. First, the case at the Emergency Installation at Sultan Ilmanudin Hospital (RSSI). Members of the West Kotawaringin Regency House of Representatives found many expired drugs at the hospital. There was concern that this had something to do with fraud, which affected the income of the largest hospital in West Kotawaringin. Second, a medication error occurred to a midwife at Kamal Muara Hospital, Penjaringan, North Jakarta. The police conducted the examination as part of the investigation into the case of giving expired drugs to pregnant women. North Jakarta Police Chief, Police Commissioner Budhi Herdi Susianto stated that the examination was conducted to obtain information regarding the provision of drug prescriptions to the pharmacist with the initials H who gave expired drugs to the victim. Third, a case occurred in the North Jakarta, there was a pregnant woman named Novi Sri Wahyuni, 21 years old, who obtained expired drugs from the Kamal Village Health Center. She was given four types of medicine. One of the drugs had expired. The result was that she felt abdominal pain and headache. Novi and her family have reported the community health center to the Penjaringan Metro Police, claiming consumer protection under Article 8 of the Republic of Indonesia Law No. 8/1999. The report was recorded as LP940/K/VIII/2019/SEKPENJ. Meanwhile, the DKI Jakarta Health Office has relieved the pharmacist at the Kamal Muara Village Health Center who gave expired medicine to the pregnant woman. The pharmacist concerned was temporarily discharged. Furthermore, it will be discussed because the impact on the victim did not cause death.

Based on the fulfillment of the need for medicine, it will then lead to a reciprocal relationship that needs each other, even causing interdependence between the community that needs treatment and the community that provides the medicine. The needs of life increase and turn into daily needs, in accordance with the level of progress that has been achieved in terms of education, social culture, economy and so on.

In Article 1 Paragraph (3) of Law No. 8/1999 concerning consumer protection, which explains that consumer protection is every individual, both in the form of a legal entity and not a legal entity established and domiciled or conducting activities within the jurisdiction of the Unitary State of the Republic Indonesia, either individually or jointly through agreements organizing business activities in the form of various fields of course. There is a paradigm shift regarding medication errors in which the maximum prevention effort is expected so that the business can generate large profits for itself. Meanwhile, consumers as health enthusiasts expect to be able to obtain the benefits of the services they want satisfactorily. The development of the economic world nowadays, the provision of goods is no longer based on the reasons for meeting the needs of the community but has changed into

certain reasons that are expected to be able to generate a lot of profit for the perpetrators as well.

In pharmaceutical services, there is a regulation regarding the obligation to include an expiration period for a product which is regulated in Government Regulation of the Republic of Indonesia No. 72/1998 concerning the Safeguarding of Pharmaceutical Supplies and Medical Devices, this is intended to provide information to consumers that the product is of less guaranteed quality if the product has expired. Sanctions imposed if it is found that a pharmacy sells and distributes expired medicines, it will be subject to more severe sanctions, if there are claims or reports from consumers who consume these expired medicines. However, as long as there are no claims from consumers, the pharmacist in charge of a pharmacy can escape the law, even though their actions have been detrimental to consumers.

The case illustration above indicates that the norm in Article 12 of the Pharmaceutical Law is only subject to administrative sanctions. The same thing applies to Regulation of the Minister of Health No. 72/2016 Articles 3 and 12, which only impose administrative sanctions. This vague norm will be clarified, in order to find a law that provides protection for ambulatory patients. This is confirmed that in the existing conditions ambulatory patients suffer losses due to medication errors.

Identifying risk factors for medication errors is an important first step in their prevention and an important purpose of health care assurance.¹⁰ Existing research is more focused on identifying factors that cause medication errors that focus on health workers. Meanwhile, the success of treatment is also related to patient characteristics so that the incidence of medication errors reported also differs depending on patient characteristics. Previous studies have only studied medication errors based on patient characteristics. Medication errors are more common in the age group 61-70 years or around 49%.¹¹ Meanwhile, Zakharov's research states that medication errors occur in children less than 5 years old.¹² In addition, Patel's research states that male patients are more affected by medication errors.¹³ Therefore, this research aims to determine the factors that cause medication errors in the prescribing and dispensing phases.

¹⁰ Attia Bari, Rehan Ahmed Khan, and Ahsan Waheed Rathore, "Medical Errors; Causes, Consequences, Emotional Response and Resulting Behavioral Change," *Pakistan Journal of Medical Sciences* 32, no. 3 (2016): 523–528.

¹¹ Akhil Narne et al., "Assessment, Evaluation, and Analysis of the Medication Errors of the Patients Admitted at the Emergency Department of a Tertiary Care Teaching Hospital of a South Indian City," *Asian Journal of Pharmaceutical and Clinical Research* 10, no. 5 (2017).

¹² Sergey Zakharov, Navratil Tomas, and Daniela Pelclova, "Medication Errors—an Enduring Problem for Children and Elderly Patients," *Upsala Journal of Medical Sciences* 117, no. 3 (2012).

¹³ Nrupal Patel et al., "A Study of Medication Errors in a Tertiary Care Hospital," *Perspectives in Clinical Research* 7, no. 4 (2016): 168–173.

RESEARCH METHODOLOGY

The method used in this research is normative legal research. Normative legal research is a process for finding legal rules, legal principles, and legal doctrines that aim to answer current legal issues.¹⁴ In this method, law is often conceptualized as something written in laws and regulations or conceptualized as rules or norms that guide human behavior. This research combined the method with prospective data collection techniques. This technique means that research which data or information about the research subject cannot be observed and owned by the researcher during the research. In addition, data required for a particular research project that has not yet been collected or is not yet part of another research project.¹⁵

RESULT AND DISCUSSION

Medication error is an incident that can not only be detrimental to patients but can also endanger patient safety committed by health workers, especially in the patient's treatment service. Many studies indicate that there are cases of medication errors that occur in the prescribing phase. Based on the research that has been conducted, more than half of the prescriptions are found to have medication errors. The incidence of medication errors can occur because there are errors of >50% in all prescriptions and/or absence or incompleteness in the prescribing section, namely the prescriptio section (unclear drug names, no concentration or dosage of preparations, no dosage form, no dose of administration or amount, and no dosage unit).

Medication errors that often occur are in writing prescriptions that are difficult to read in the drug name section, the number of drugs in the compounded prescription, the numerical units of the drugs used, the intended dosage form, the rules of use and the writing of the number of iterations. In prescription writing, the prescriptio section is a very important part. Based on the results of the research, the incidence of medication errors in the inscriptio section is still very high. The components assessed in the inscriptio section are that the doctor's name is not clear enough, there is no doctor's license to practice, and there is no date of administration. Previous research conducted at the Mother and Child Hospital indicated that there was no doctor's name listed, no doctor's license to practice, and no date of administration. There are differences in results with previous studies on the writing of a doctor's practice license(SIP).

The research found that doctors who included a practice license on the prescription used a stamp containing the doctor's name and practice license. Writing the doctor's name, practice license, and date of prescription writing is very important in writing prescriptions. If this is not applied by health practitioners, then

¹⁴ Peter Mahmud Marzuki, *Penelitian Hukum Edisi Revisi* (Jakarta: Kencana, 2016).

¹⁵ John W Creswell and J. David Creswell, *Research Design Qualitative, Quantitative, and Mixed Methods Approaches*, Fifth Edit. (California: SAGE Publications, Inc, 2018).

there is a possibility of errors in drug prescribing. Therefore, the pharmacist, pharmacy manager or pharmacy can directly contact the doctor concerned to double check before the medicine is compounded. In addition to being useful when screening prescriptions, writing a practice license also provides protection to patients and can provide legal certainty and assurance to the public that doctors who work are doctors who are truly eligible and have qualified to conduct treatment or practice.

The incidence of medication errors in the invocatio section was 0%. The component assessed is the writing of the sign R/ = recipe on the left side of the prescription which means take or give. Hospital prescriptions have included the writing of R/. That way the doctor will not make a mistake in writing the R / sign. The R/ mark is an opening sign of communication between the doctor writing the prescription and the pharmacist at the pharmacy. In the results of the research, the incidence of medication errors in the prescriptio section was quite large. The components observed in the form of unclear drug names were 0%, no concentration or dosage of the preparation was quite large, no dosage form, no dose of administration (amount) was 0%, and no dosage unit was quite large. In previous studies, it can potentially lead to very dangerous medication errors because there is no drug name or abbreviation of the drug by 12%, no clear drug concentration, no large enough dosage form, no dosage unit, and no amount of drug administration.

The occurrence of errors in the prescriptio section is very dangerous for patients. No drug concentration, drug dosage form, amount of administration, and unit dose will affect the therapeutic or treatment needs of the patient so that it can lead to not achieving treatment purposes and can even endanger the patient's condition due to under-dosing or over-dosing. There are several prescriptions that experience under-dosing and over-dosing. For example, under-dosing of antibiotic drugs will cause ineffective drug therapy and over-dosing in the administration of digoxin will cause digoxin poisoning such as symptoms of hypokalemia and arrhythmia.

The unit of drug dosage has a significant effect on the level of drug interaction in the body and the amount of drug that enters the body. Many variations of drugs have milligram or gram drug units. The occurrence of errors in drug units will affect the amount of drug or drug dose that enters the body. Errors in drug dosage can cause patients to suffer from drug poisoning and even death. The existence of dosage forms is also very important for the success of patient treatment because the selection of dosage forms is the needs, conditions, and conditions required by the body. For example, there is paracetamol which has more than one type of dosage form. Writing drug preparations such as tablets or syrups is very important in drug prescribing.

The incidence of medication errors in the signatura section. The components assessed were no rules of use and no route of administration. The previous study indicated that there was a high rate of no rules of use and a high rate of no route of

administration. The signatura section must be written clearly for the safe use of the drug and its success. The absence of rules of use in prescription writing is very dangerous for patient compliance and drug use. Errors in the signatura section can lead to misinformation on the use of the drug ranging from how many times to take the drug each day, whether the drug should be taken after meals or before meals. No route of administration can lead to ineffective patient treatment.

The research rate of medication errors in the subscriptio section was 0%. The component observed was the absence of a doctor's signature. The existence of a signature on the prescription is very important in order to guarantee the authenticity and validity of the prescription. The results of the research obtained good results in which the writing of signatures or paraphrases. Factors that can cause doctors not to write their initials on prescriptions are because doctors use a stamp instead of a doctor's identity. However, the stamp only contains the doctor's name and Practice License. Many doctors do not write their initials because they think it is enough with the stamp. In the research, the incidence of medication errors in the pro section was quite large. The components observed were 0% no patient name, no patient age, and no gender. The incidence of medication errors is quite high. Patient data in prescribing writing is very important because it is needed in treatment services as a distinction between one patient and another. There are similar names that we can see and match with age and gender.

Errors will be fatal because they will be confused in giving drugs to patients who have the same name so that it will cause errors in treatment that are not in accordance with the disease or condition suffered by the patient. The results of the research did not have gender having the highest incidence rate, this is very influential on treatment services. Patients can have similar names so that we can recognize or differentiate with the patient's gender.

There are several factors that can lead to medication errors in the prescribing phase such as the total of doctors on duty, the number of patients every day, doctors' ignorance of writing prescriptions in accordance with the 2014 Minister of Health Regulation, or internal factors suffered by doctors. The causes of errors in prescription writing are work environment factors, such as patient family interruptions and interruptions, patient factors, that is, patients who are not cooperative with their conditions, health worker factors, that is, poor doctor writing, knowledge, and excessive workload.

The results of the research indicated that prescriptions written by specialists accounted for a large number of prescriptions while general practitioners accounted for half of the prescriptions. There was a considerable amount of medication errors committed by specialists and those committed by general practitioners. Attitude is a determinant of a person's behavior. Attitude and behavior will form a perception, feeling, motivation and personality. Attitude is a mental state learned through experience that produces a specific influence on a person's response to other people or related situations. Specialist doctors have experience in a longer working time

compared to general practitioners so that specialist doctors have perceptions, personalities and attitudes that have been embedded in them so that they become a habit.

Based on the above description, it can be the reason why specialist doctors have the opportunity to make medication errors along with pharmacists. Meanwhile, according to Herzberg, there are two groups of factors or conditions in the job that determine the high or low motivation and level of job satisfaction of a person, especially a specialist doctor, such as (1) The satisfier group is a factor that can encourage a person towards a positive and more motivating attitude, thus increasing job satisfaction; (2) The dissatisfier group is a factor that can prevent a decrease in morale and can avoid chaos that kills productivity. Someone will provide the best service if the service provided is in accordance or compliance with established standards.

The Prescribing Phase

Factors that cause medication errors in the prescribing phase, such as health workers being disturbed by the sudden ringing of telephone. Uncomfortable environmental disturbances such as noise, disharmonious work atmosphere, telephone interference, work overload due to lack of human resources, are sources of stress for health workers. Such conditions can interfere with the concentration and attention of the staff so that errors can occur.¹⁶

Perceived workload factors can cause medication errors in the prescribing phase, especially for the statement that health workers are able to complete each job themselves. Workload is the number of work units assigned to one resource in a certain period of time.¹⁷ In the process of writing prescriptions, doctors must divide their time between writing patient prescriptions, patient visits, writing patient status, doctor's handbooks and notes for duty doctors. The high level of busyness of doctors in relation to the number of patients can lead to errors in writing prescriptions. If the number of patients is small, the tasks and work of health workers can be controlled properly, but if the number of patients is large with a lack of available human resources, it can cause an increase in workload hours or other work is not carried out and not maximized.¹⁸ Excessive workload will reduce the quality of service, but on the other hand, workload that is in accordance with its portion can improve quality through the development of service innovation.

¹⁶ Nurlindawati and Noraliyatun Jannah, "Budaya Keselamatan Pasien Oleh Perawat Dalam Melaksanakan Pelayanan Di Ruang Rawat Inap," *Jurnal Ilmiah Mahasiswa Fakultas Keperawatan* 3, no. 2 (2018): 196–204.

¹⁷ Ava Mansouri et al., "A Review of Medication Errors in Iran: Sources, Underreporting Reasons and Preventive Measures," *IJPR: Iranian Journal of Pharmaceutical Research* 13, no. 1 (2014): 3–17.

¹⁸ Anna L Yusuf, "Kajian Administrasi Dan Farmasetik Resep Pasien Rawat Jalan Di RSUD Dr. Soekardjo Kota Tasikmalaya Periode 10 Maret – 10 April 2017 Berdasarkan Permenkes Nomor 58 Tahun 2014," *Pharmed: Journal of Pharmaceutical Science and Medical Research* 2, no. 1 (2019).

Communication factors can cause medication errors stated that they disagreed with the oral communication between doctors and pharmacists about the use of drugs. Good communication between doctors and pharmacy personnel actually has many benefits, especially in terms of medication safety and security for patients. However, in daily practice in hospitals, the channels to foster this communication are minimal or non-existent. Informal communication (e.g. over the phone) is often mistimed; when a doctor receives a call, he or she may not immediately remember the patient being discussed. If a pharmacy worker must deliver a message to a friend who happens to be past his duty time but has not had time to communicate with the doctor who handles the patient, in this case the pharmacy worker does not necessarily understand the clinical condition of the patient so that the final result of the conversation/consultation is not optimal.¹⁹

Based on the condition of the hospital environment, the prescription process at that time was stated to be less agreeable, especially to the lighting of the work area supporting the implementation of the duties of health workers. The lighting factor is one of the work environment factors included in the risk factor group, if the lighting intensity is inadequate it can cause labor productivity to decrease. Lighting also affects eye health and indirectly affects the level of concentration on work. Dim workplace lighting conditions generally cause labor to try to see the work as well as possible by looking continuously, so that it can cause eye fatigue, mental fatigue, decreased concentration and thinking speed as well as decreased intellectual abilities. Poor lighting can interfere with health services in hospitals and can further cause health problems.²⁰

The problem of prescribing errors that occur in hospitals is procedural and administrative errors in the form of illegible prescription writing and prescription completeness problems. Several types of errors are indeed quite common in prescription writing, for example: there are still many drug prescriptions written without any signa or rules of use, sometimes the signa written is less clear or incomplete. These errors are especially prevalent in prescriptions written by doctors practicing in hospitals. The result is that it can obstruct the patient's treatment process.

The Dispensing Phase

Factors that cause medication errors in the dispensing phase in hospitals perceive work distraction factors at the time of dispensing can cause medication errors with health workers feeling disturbed by the sudden ringing of the telephone. Phone ringing can disrupt work concentration which can cause workers to make mistakes and reduce work productivity.

¹⁹ Dea Anita Ariani Kurniasih et al., "Peran Apoteker Dalam Kolaborasi Interprofesi: Studi Literatur," *Majalah Farmaseutik* 18, no. 1 (2022): 72–80.

²⁰ R. H Simamora, "Learning of Patient Identification in Patient Safety Programs Through Clinical Preceptor Models," *Medico Legal Update* 20, no. 3 (2020): 553–556.

Workload can cause medication errors in the dispensing phase. In drug preparation, pharmacy personnel perform screening and assessment of prescriptions, copy drug administration instructions to the drug recording card, input drugs and make drug etiquette in the system, prepare drugs for one day of use, package drugs, hand over drugs and check by nurses which are then stored in the patient's medicine box. Nurses have an important role in the drug distribution system in hospitals as they prepare and reconstitute doses for consumption, administer (consume) drugs, record each drug consumed and maintain drug supplies in the room.²¹

Health workers are able to complete each task by themselves. Pharmacy workers and nurses revealed that the number of patients treated affects whether or not the patient's medication preparation is good. Dispensing errors can occur due to inadequate number of staff and excessive workload.²² Lack of communication in the dispensing phase can lead to medication errors, for example the lack of communication between pharmacists and nurses in the preparation of drugs for patients. Communication is needed to realize effective cooperation, nurses are responsible for making the right interpretation of the assigned drug order. Poor communication leads to misinterpretation between nurses and pharmacists of drug orders that must be given to patients.²³ Dispensing areas should be designed appropriately to avoid errors related to environmental conditions. Lack of a drug preparation or compounding room will lead to medication errors during dispensing.²⁴

The educators disagreed with the preparation of drugs for patients according to the request on the prescription because there have been errors in taking drugs due to similar names. Errors in the dispensing phase most often occur due to unclear writing or because the drugs are placed close together, the names and appearance of the drugs are similar.²⁵

In both phases, work distractions such as ringing phones, large workloads of health workers, not being able to do every job themselves, miscommunication between doctors and pharmacists about the use of drugs for patients, unfavorable lighting conditions while working, and education on writing prescriptions that do not meet the requirements for completeness of prescriptions, the absence of a drug

²¹ J. M Purba, *Komunikasi Dalam Keperawatan* (Medan: USU Digital Library, 2013).

²² Nurlindawati and Jannah, "Budaya Keselamatan Pasien Oleh Perawat Dalam Melaksanakan Pelayanan Di Ruang Rawat Inap."

²³ Steyfan Benawan, Gayatri Citraningtyas, and Weny I. Wiyono, "Faktor Penyebab Medication Error Pada Pelayanan Kefarmasian Rawat Inap Bangsal Anak RSUD Tobelo," *Pharmacon* 8, no. 1 (2019): 159–167.

²⁴ Yosefien Ch. Donsu, Heedy Tjitrosantoso, and Widdhi Bodhi, "Faktor Penyebab Medication Error Pada Pelayanan Kefarmasian Rawat Inap Bangsal Anak RSUD Prof. Dr. R.D. Kandou Manado," *Pharmacon* 5, no. 3 (2016): 66–74.

²⁵ Benawan, Citraningtyas, and Wiyono, "Faktor Penyebab Medication Error Pada Pelayanan Kefarmasian Rawat Inap Bangsal Anak RSUD Tobelo."

preparation room, and education on drug preparation that is not in accordance with prescription requests.

In addition, there are also weaknesses in the law because it only regulates the administration (civil). There is nothing that leads to criminal law on outpatients. If something fatal happens, of course it remains the responsibility of the hospital which is the cause of medication error in the prescribing phase and the factors that cause medication error in the dispensing phase, of course there is a revision of Article 3 and Article 12 of an effort to protect the law of outpatients due to medication errors.

CONCLUSION

Factors causing medication errors in the prescribing phase include work distractions, such as being disturbed by ringing telephones, workload, namely health workers are not able to do every job themselves, communication, such as poor oral communication between doctors and pharmacists about the use of drugs for patients, environmental conditions, namely lighting that is less supportive when working, and education, such as writing prescriptions that do not comply with the requirements for completeness of prescriptions.

Factors causing medication errors in the dispensing phase include work distraction, such as being disturbed by ringing telephones, communication, such as poor communication between pharmacists and nurses in preparing patient medications, workload, such as health workers not being able to complete each job themselves, environmental conditions, such as the absence of a drug preparation room, and education, such as drug preparation that is not in accordance with prescription requests. The incidence of medication errors is quite high in several hospitals and public health services. There is a relationship between education level and medication errors in the prescribing phase.

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